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| First Action Interview Pilot Program Pre-Interview Communication | Application No. 10/578,570 | Applicant(s) HOCEVAR ET AL. | |
| | Examiner ADAM A. ARCIERO | Art Unit 1795 | Page 1 of 2 |

-The MAILING OR NOTIFICATION DATE of this communication appears on the cover sheet with the correspondence address -
THE SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **ONE MONTH OR THIRTY (30) DAYS**, WHICHEVER IS LONGER, FROM THE MAILING OR NOTIFICATION DATE OF THIS COMMUNICATION.

This time period for reply is extendable under 37 CFR 1.136(a) for only ONE additional MONTH.

This communication constitutes notice under 37 CFR 1.136(a)(1)(i).

Applicant must, within the time period for reply, file: (1) A letter requesting not to have a first action interview; (2) A reply under 37 CFR 1.111 waiving the first action interview and First Action Interview Office Action; or (3) An Applicant Initiated Interview Request Form (PTOL-413A) electronically via EFS-Web, accompanied by a proposed amendment or arguments, and schedule the interview within 2 months from the filing of the request. A failure to respond to this communication will be treated as a request not to have an interview. If applicant waives the First Action Interview Office Action, the instant Pre-Interview Communication is deemed the first Office Action on the Merits. The next subsequent Office action may be made final if appropriate. See MPEP 706.07(a).

Disposition of Claims

- 3) ☒ Claim(s) 25-31, 34-41 and 43-47 is/are pending in the application.
3a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 4) ☐ Claim(s) _____ is/are allowed.
- 5) ☒ Claim(s) 25-31, 34-41 and 43-47 is/are rejected.
- 6) ☐ Claim(s) _____ is/are objected to.
- 7) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 8) ☐ The specification is objected to by the Examiner.
- 9) ☒ The drawing(s) filed on 5 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 10) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 11) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

Contact Information

Examiner's Telephone Number: (571)270-5116
Examiner's Typical Work Schedule: Monday to Friday 8am to 5pm EST
Supervisor's Name: Dah-Wei Yuan
Supervisor's Telephone Number: 571-272-1295

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 05/05/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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| First Action Interview Pilot Program Pre-Interview Communication | | Application No. 10578570 | Applicant(s) HOCEVAR ET AL. |
| | | Examiner ADAM A. ARCIERO | Art Unit 1795 |

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Notification of Rejection(s) and/or Objection(s)

| # | Claim(s) | Reference(s) (if applicable) | Rejection Statutory Basis | Brief Explanation of Rejection |
|---|--------------------------------------|---------------------------------|------------------------------|---|
| 1 | 25,26, 30, 34-38, 40, 43-45 47 | A,B | 103(a) | A discloses blending a non-ion conducting material (pg. 5, [0058]) with a low melting point salt (pg. 6, [0073]-[0074]), hydrolysable organic precursor of silica (pg. 5, [0063]), organic solvent solution of heteropolyacid (pg. 5, [0055]), casting into film ([0106]). (see continuation below) |
| 2 | 27 | A,B,C | 103(a) | A,B do not disclose blend of two polymers as claimed. C ([0176] and [0222]). Would have been obvious to substitute C membrane materials for A,B materials. |
| 3 | 28-29, 31 | A,B,D | 103(a) | A,B does not disclose incremental addition of components. D teaches dropwise addition with careful mixing to ensure a homogeneous mixture (D, [0013]). |
| 4 | 39, 46 | A,B,E | 103(a) | Claim 39,46 A,B do not disclose 12-heteropolyacid. E discloses 12-tungstophosphoric acid n-hydrate (E: [0126]). It would have been obvious to modify A,B with teachings of E because E teaches (see continuation below) |
| 5 | 41 | A,B,F | 103(a) | A,B do not disclose nano-scale ion-conducting channels. F discloses an ionic conductive polymer membrane having nano-sized pores (channels) (F: Abstract). (see continuation below) |

Expanded Discussion/Commentary

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|---------------------------|--|--|
| 1 | | A does not disclose electronically and ionically non-conducting polymer. B discloses using a polyethersulfone (PES) film membrane because PES is a high temperature amorphous thermolastic that exhibits long-term stability at elevated temperatures (pg. 7, [0094]). It would have been obvious to include the PES membrane of B into A as an electronically and ionically non-conducting polymer. Claim 26 (A: [0019]). Claim 30 (A: [0063]). Claim 34,43 (B: [0094]). Claim 35 (A: [0073]-[0074]). Claim 36-37, 44 (A: [0012]). Claim 38,45 (A: [0063]). |
| 4 | | 12-tungstophosphoric acid n-hydrate is a suitable heteropolyacid for a polymer membrane of a fuel cell. |
| 5 | | It would have been obvious to modify A,B with teachings of F to provide a polymer electrolyte having excellent ionic conductivity. |
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| DATE: 1/19/2010 | | /Adam Arciero/ Patent Examiner, AU 1795 |
| | | /Dah-Wei D. Yuan/ Supervisory Patent Examiner, Art Unit 1795 |